Report

Establishment of School-Industry Linkage in Secondary Vocational School - Action Research

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Foreword

The study entitled "Establishment of School-Industry Linkage in Secondary Vocational School-Action Research" was taken up as a ERIC Research Project of PSS Central Institute of Vocational Education, Bhopal The study was undertaken to establish school industry linkages in selected schools for better implementation of vocational educational programme. Shri Saurabh Prakash, Reader Engineering & Technology Division of PSSCIVE was the Principal Investigator of this research project. It is hoped that the findings of the study will have greater significance in modifying and revising the strategies for planning, implementation and monitoring Vocational Education Programme in their respective states

Comments and suggestions regarding the study will be highly appreciated

Prof. S. Z .Haider
Joint Director

Bhopal
March, 2002

Preface

Vocationalisation of Education at the Secondary School stage was initiated in the country with aim to prepare man power for self and wage employment. Students will be diverted to various occupation as per needs of society. It was suggested that an active collaboration should be made between school and industries for better implementation of programme. An attempt was made to establish school industry linkage in the selected schools. It was felt that collaboration with industries improves the quality of students It is strongly recommended that vocational courses should be started with collaboration of industry. It is hoped that present study would be useful to policy makers and administrators for better implementation of Vocational Education Programme in the Country.

Bhopal	Saurabh Prakash
March, 20002	Principal Investigator

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- Principal and Vocational teachers of Govt. Boys Hr. Secondary School, Bairagarh, Bhopal.
- Principal and Vocational teachers of Govt. Higher Secondary School, Khitola bajar, Sihora, Jabalpur
- Principal and Vocational teachers of Govt. Higher Secondary School, Adhartal, Jabalpur
- Director, Directorate of Veterinary, Bhopal
- Director Bull Mother Dairy Farm, Bhabhada Road
- General Manager, MP Dairy Plant, Bhopal
- Director, Central Institute of Agricultural Engineering, Bhopal
- Proprietor of local industries

INTRODUCTION

CHAPTER 1

Introduction

Vocational Education Programme

Definition· Vocationalisation of education implies an organized way of developing job-related skills It aims at laying foundations for the world of work. UNESCO associates VE with the upper secondary stage of education and defines as education designed to prepare skilled personnel at lower level of qualifications for one or a group of occupations, trades or jobs Vocational education usually, provided at upper secondary level, includes general education, practical training for the development of skills required by the chosen occupation and related theory. The properties of these components may vary considerably but the emphasis is generally on practical training.

Dimensions of VEP: The VEP at the school level has four dimensions (I) Work experience/SUPW at primary and upper primary stage forms an awareness component; (ii) Pre-vocational dimensions at secondary level provides vocational readiness; (iii) The vocational Education component at the senior secondary level gives the skill required for the specific occupations; and (iv) the Generic Vocational Course (GVC) for the academic stream aims to provide transferable skills

Policy Interventions

N.P.E - 1968: National Policy on Education (1968) on the recommendations of Kothari Commission made two revolutionary changes in the Education System:

- A thorough reorganization of Education Structure into 10 + 2 + 3 year pattern.
- Provision of distinct academic and vocational streams at the + 2 stage.

In pursuance of NPE 1968, NCERT gave a scheme for introduction of vocational education through its document "Higher Secondary Education and its Vocationalisation" in 1975 The vocational education programme was introduced at higher secondary level in four states and two Union Territories in 1976-77.

N.P.E - 1986: The NPE 1986 gave an impetus to the programme. It interalia, stressed the need for introduction of systematic well-planned and vigorously implemented programme of vocational programme which is crucial in the proposed educational reorganization.

Vocational Education will be a distinct stream intended to provide students for identified vocations spanning several areas of activity. Programme of Action, (1986) accepted the model suggested by the Kulandaisamy Working Group. The group reviewed the scheme extensively and provided guidelines for development of programme.

C.S.S - 1988: The programme was revitalized by the introduction of Centrally Sponsored Scheme in February 1988 with the following objectives

- To provide diversification of educational opportunities so as to enhance individual employability;
- Reduce the mismatch between demand and supply of skilled manpower; and
- To provide an alternate for those pursuing higher education.

The Centrally Sponsored Scheme (CSS) has provision(s) under which assistance is given to the State Governments/ UT administrations and Non-Government Organizations for approved purposes

P.O.A - 1992. The revised policy formulation and the Programme of Action 1992, retains the policy framework laid by the NPE-86.However, the targets for coverage has been revised to 10 % by 1995 and 25 % by 2000 AD. Simultaneously, certain financial provisions under the scheme has been revised and an experimental phase of pre-vocational have been initiated. The scheme has been accorded high priority and forms one of the thrust areas.

Components of the Scheme

The basic components of the scheme are·

- Management system: Creation of a separate administrative structure at the State, District and School level to manage VEP. The support is also extended to strengthen the technical support system for research, development, training and evaluation by strengthening the SCERTs.
- Provision for District Vocational Surveys to identify the local need based courses.
- Provision for 2 full-time teachers per section and honorarium for part-time experts.
- Provision for infrastructure and equipment

Liberal financial assistance is provided under the scheme not only for infrastructure creation, but also for recurring components like, raw materials, field visits and stipend for apprenticeship training, etc.

Features of VEP

Broad areas of vocational education: 150 vocational courses have been introduced in the following broad areas:

- Agriculture
- Business and Commerce
- Engineering and Technology
- Health and Para-medical services
- Home Science
- Humanities, Science and Education

The Courses are selected on the basis of the assessment of manpower requirement through district vocational surveys.

Course Structure: The National Curriculum is designed to give 70% of the total instructional time to vocational theory and practice and 30% to the study of language and general foundation course in the two year period. The component of on-the-job training through linkages with the industry is visualized as an integral part of the curriculum. However, some basic structure in the form of workshed and equipment is provided in the school itself for practical training. The examination and certification is done by the Boards of Secondary Education of each State.

Curriculum Transaction : The vocational education programme curriculum is transacted following a collaborative model for economic feasibility and the optimum use of existing instructional facilities in the collaborating institutions. The collaborative model of vocational education programme under operation consists of :

- Basic skill training in the institution
- Specialized skill training in collaborative institution
- On-the-job training

Implementation and Evaluation of VEP : With the implementation of Centrally Sponsored Scheme (CSS), 1988, the vocational Education Programme was implemented

practically in all the states and union territories. It is reported that about 5 lakhs students are enrolled in vocational courses at +2 level which are being implemented in 5,500 higher secondary schools In all about 150 vocational courses of 2 year duration covering different areas of occupations which can be put broadly categorised under Agriculture, Business & Commerce, Engineering & Technology, Home Science, Health & Paramedical and Humanities, Science and Education being offered. As per the scheme, the schools offering vocational courses should have enough infrastructural facilities for effective implementation, or should offer the course in collaboration with a nearby resource institutions or organisation which has the requisite facilities Provision for on-the-job training (OJT) has been greatly emphasised in all these courses, specially those which require field training to sharpen practical skills.

The centrally sponsored scheme (CSS) has been in operation for last twelve years. There has been some rethinking regarding funding to VEP by central governments, and as a consequence of which flow of funds from central government to state governments was stopped which adversely affected the implementation of VEP. Fortunately, after a couple of years, the funds are again being provided by the Central Government for sustaining and promoting VEP

In between the VEP has been evaluated many times, through various agencies and organisations, informally and formally Two external agencies were recently assigned the task for evaluating the scheme of vocationalisation of secondary education by the Ministry of Human Resource Development, Government of India The Operations Research Group (ORG) submitted its report "Evaluation of the scheme of Vocationalization of Secondary Education" in 1996. The Centre for Research, Planning and Action undertook the evaluation work in 1999 and submitted its report "In-Depth Review of the Centrally Sponsored Scheme of the Vocationalization of the Secondary Education". Both these evaluation reports have thrown light on the strengths and weakness of the scheme; especially weakness in its implementation , lack of management structure, shortage of teachers, non-availability of instructional material, inappropriateness of examination system vis-à-vis requirement of objectives of vocational courses, absence of school-industry linkage etc. The points which emerge from these reports and also from data collected from States otherwise also, and have reflection on the effectiveness of VEP are :
over the years the enrolment in vocational courses has shown some upward trend, the proportionate share of vocational students (at +2 level) vis-à-vis total enrolment of the

higher secondary stage is only about 5% (a significant departure from the target set 10% by 1995 and 25% by 2000)

as high as 38.3 % of the vocational passouts were pursuing higher studies (many in general degree courses)

low priority being accorded to vocational education by most of the states as compared to the other programmes.

The Concept of Developing Linkages

The vocational education and training programmes to be developed successfully as an important national scheme require proper co-ordination and collaboration between schools and industries. "Industry" may be considered as any agency, individual or institution, which has the means, competencies and potentialities to assist in imparting vocational competencies to the vocational students, providing on-the-job training and absorbing the vocational products in wage and self-employment. In practical terms "the industries" would mean collaborating agencies (professional institutions, employers, organisations) and the community at large. The Industry may be a factory, an agricultural farm, a hospital, a workshop or a business concern.

Linkages between schools and collaborating agencies

The vocational education will be effective only if the employers' organizations fully participate in the development of the curriculum, organisation of teaching and learning - both in the classroom and on the work bench, special effort will have to be made to strengthen the linkages between the vocational schools/institutions and the neighbouring employers' organisations in the agricultural sector, industrial sector and service sector (economic as well as social)

The involvement of professional experts in imparting training for skills would bring them into closer collaboration with educational activities and offer them opportunities to appreciate the problems involved in institutional training and the need for the provision of facilities by various industries, agricultural farms, commercial organisations, hospitals, etc.

Needless to say, vocational programme in most cases will have to be organised by sharing the facilities of professional institutions, besides engaging part-time staff. The programme, as already said earlier, is a partnership programme

between education and other sector of the economy and the services between the school and the Industry.

Linkage with community

The people's participation in the organization of vocational education for acceptability, respectability and success of the programme is a must. It is recognised that parents, political leaders and voluntary organizations may have to come forward to support the scheme both conceptually and financially. This is all the more important at the institutional level where instructions actually takes place and the educational institutions will have to be organized to remain sensitive to the needs of the environment, to remain in contact with parents and voluntary agencies, to disseminate information about vocational education, employment opportunities, etc Considerable autonomy and facilities will have to be given to the Heads of institutions to enable them to develop proper contacts

Vertical Linkage

In addition to the School-Industry linkages, which are horizontal in nature, vertical linkages are also equally important for proper functioning of the programme. At the district level, school should have good rapport with the user departments for knowing and understanding their needs District Vocational Education Officer through District Vocational Education Committee and District Vocational Training Centre, which may be established in the future, should be able to guide and supervise the programme and arrange for on the job training places in the community. The Directorate of Vocational Education at the state level, will provide administrative support to the programme besides keeping close linkages with the State Institute of Vocational Education (SIVE) and State Council of Vocational Education (SCVE) with respect to academic input and policies The State level institutions will have close linkages with their counterparts i.e , CIVE, JCVE at the National level for seeking guidance and for the implementation of the national policies and the programme on Vocational Education.

Some Salient Features in Developing Linkage

Vocational education will be effective only when there is appropriate linkages between the school and the collaborating institutions.

The linkage between the school, industry and community should not be partial; it should be a kind of partnership between the two where both work with a common goal of developing human resources in the larger interests of the community as a whole. In other words, the purpose of developing linkage should not only be confined to provide on the job training or a few lectures by the specialists in the institutions, but should include collaboration and cooperation right from the planning stage to the employment stage. Thus, the question of linkage should be viewed in its total involvement of the school and industry/community for the implementation of the scheme of vocationalization.

Linkage at Different Levels

There has been a general complaint of the employers that the products of the +2 vocational stream are not upto the mark. The syllabi are insufficient/ irrelevant to do the job for which the students are being prepared It is, therefore, necessary that the employers are involved at the curriculum development level itself. The level of competence, content and methodology, including the evaluation, have to be processed and decided upon with the active co-operation and involvement of the employer.

The Education Department or the concerned Department/ Association/ Organisation/ Establishment at the highest level should request the employers to depute their specialists to the curriculum committees of Boards of Education.

Further, the employers may be requested to give their opinion, at appropriate intervals, for revision of courses to keep it relevant as per vocational practices. A few industries maintain R&D cells which may be asked to give their opinions on the concerned curriculum.

Adoption of an Institution

As recommended in various documents, the institutions for offering vocational courses should be selected on the basis of district vocational survey keeping in view the criteria of their suitability for imparting vocational instruction and training in an effective manner. However, an effective linkage between school and industry may be set up if schools are adopted by the industry and thus take an active part in supplementing the activities of the school. For this, it is suggested that the industries may be requested, influenced and encouraged by the school and the community. If necessary and possible, some incentives may

be provided to the adopting industry. For example, an institution offering banking vocational course may prefer to have its account and deposits in a particular bank if the bank is willing to adopt the institution for imparting the training in banking.

Linkage in Developing Textual Material

The practicians from the industry, community may be put on the textbook committees and on panel of authors by the Board of the Education Department of the State They should be paid suitable honoraria specially for such textual materials which are of practical nature and for which there is great dearth.

Practical Training

Practical training or on-the-job training in vocational courses should generally be provided by the collaborating institution. But the practical training/ on-the-job training in several cases especially in the area of trade and commerce has a different pattern than the practical training in Technical, Agricultural and Para-medical courses. And therefore, different modalities have to be evolved in such cases. Practical training in the area of Trade and Commerce in the initial stages should be provided through the simulated conditions in the institution itself. In the various literature developed by the NCERT, it is indicated that the schools offering commerce based vocational courses should have a Students Bank, Students Co-operative Society and a Commerce Lab. However, these should be set up with the active collaboration and co-operation of different professional institution/ organisations. For example, a bank has to be set up on the lines of an actual bank with the help of bank people. This bank should have different forms, documents, registers, cheques, etc , which are frequently used in a bank. Similarly, the setting up of a co-operative society should be done by active co-operation, guidance and advice of the co-operative department. This will provide an effective linkage without any resistance by the professional bodies. Ultimately this should lead to a block period of on-the-job training in the real banking, coopeative, insurance set up This approach will also remove the fear from the mind of industry/trade that the students will waste the time of these organisations.

Evaluation

A better linkage between the school and industry/ community can be set up if employers are involved in the process of evaluating the students performance

where they can see of themselves the quality of the product coming out of this system. They should be on the panel of examiners and suitable remuneration/ honorarium may be paid for this purpose.

Placement

If the above linkages are properly established, it is hoped that either the product will be employed by the local industry/trade etc; or will be recommended by them for absorption in the organisations located elsewhere.

Rationale of the study

Conceptually vocational curriculum transaction model requires proper co-ordination and collaboration between school and Industry for sharing the facilities and resources to achieve the objectives of skill development in cost effective manner In this reference, an industry is considered as any agency, individual or institution or institution which has means, competencies and potentialities to assist in imparting vocational competencies to vocational students, providing on-the-job training and absorbing the vocational products in wage and self employment. However, in reality, very few institution have established the linkage with the industry Consequently the student /vocational passouts do not have the desired level of competencies and confidence,

The proposed action research aim to establish the school-industry linkage in selected institutions which would act as exemplar institutions for emulating the desired operational modalities in establishing the linkages in other schools. This would facilitate policy intervention for bringing the qualitative change in the implementation of Vocational Education Programme

Objectives :

1. Base line survey of school-industry linkages in states and identification of the strength and weaknesses.
2 Feasibility study of establishment of school-industry linkage in a school
3. Strengthening and establishment of the school-industry linkage in ten selected vocational school in four different states
4. To set-up Production cum Training centre as facilitator for school-industry linkage.
5. Monitoring and evaluation of established school linkage/Production cum Training Centre.

Limitations of the Study :

1. Study was indented to cover 4 states namely MP, Maharashatra, Rajsthan and UP. MP, Mahrashatra state nominated name of school of Bhopal, Jabalpur and Nagpur, whereas there was no response from Rajsthan and UP did not responded. Hence this study was limited to three districts and six schools.
2. In one school only one part time teacher were available and posts of teachers were not filled. Teacher was the man factor responsible for creating school industries linkage.
3. Questionnaire was used for collecting the primary data in few cases on status of school industry linkages and personal observation was made during visit to various place

METHODOLOGY

CHAPTER 2

Methodology

Methodology adopted is as given below :

1 States Directorate were requested to nominate two school of selected school at Bhopal, Jabalpur, Nagpur, Kota and Jhansi.

2. MP, Mahrashrtra state nominated name of school of Bhopal, Jabalpur and Nagpur, whereas there was no response from Rajsthan and Official of Jhansi school did not respond Hence this study was limited to three districts and six schools.

3 School selected were from rural and urban area.

4 School offered vocational courses also.

5 Visit was made to all schools and discussion was held regarding procedure for establishing school industry linkage in the schools.

6. Various concept on vocational education was discussed with school authority regarding importance of school industry linkage.

7. Discussion on school time table, laboratory development, On-the-Job training, collaborating institution with reference to course, production cum training centre and related issue were made.

8 As per discussion and suggestion, school identified nearby institution for collaborating school industry linkage.

9 Visit to nearby industries for awaereness and training for on-the-job training were arranged.

10 A collaborative arrangement with owner of industries were made for imparting the training to vocational students.

11. Concept of Production cum Training Centre (PTC) was discussed to the school. It was suggested that institute will start PTC.

12 Details of Progress made in each school is collected in Performa in following pages.

13 A status of school industry linkage in various states were collected.

PROGRESS REPORT OF SELECTED SCHOOLS

CHAPTER 3

Progress Report of Selected Schools

This chapter gives details of actions taken by the sample schools for establishment of school industry linkages in their respective schools.

Progress Report of the School -1

Name of District : ***Nagpur***

1. Name of School : Baba Nanak Sindhi Hindi High School&Jr College
2. Name of Courses :
   1. Maintenance and Repair of Electrical Domestic Appliances
   2. Accounting and Auditing
   3. Electronic Technology
3. Whether Rural/Urban : Urban
4. School Timing · 7.30 a.m to 1 20 p.m
5. Whether Full-Time Teacher available Yes/No : Yes
6. Whether Instructor available Yes/No · Yes
7. Whether practical facilities adequate, Yes/No · Yes
8. Whether student get enough time for practical : Yes
9. Status of number of Industries/ institutions in nearby schools
   Name of courses · Maintenance and Repair of Electrical Domestic Appliances (More than 25), Electronic Technology and Accounting and Auditing (About 15)
10. Is there scope to start School Industry Linkage : Yes
11. Action suggested
    - i. Scheduling of time table
    - ii. Identification of local industries for collaboration
    - iii. Grouping of students
    - iv. Identification of practical activities to be made
    - v. Preparation of individual student file
    - vi Deputation of students once in a week to industries

vii. Establishment of Production cum Training Centre in school
viii. Inviting industry experts for guest lecturer.
ix. Deputation of students during vacations to industries.

2 Outcome

i. Industries identified
ii. Student deputed to the industry
iii. Monitoring by class teacher/Principal
iv Guest Speaker being invited
v. Arrangement of OJT in Holiday/vacation

3 List of industries identified for Maintenance and Repair of Electrical Domestic Appliances Vocational course

i. Jejuna associated Industry
ii Crayons winding wire
iii R.K.Engineering Services
iv Asain Electronics
v. Deep Jay Industries
vi. Geetanjali Engineering Co.
vii. Escort Power T/F
viii. Deo Elect Repairing work
ix. Hasanji Electrical Gandhibagh
x. Hasanji Electrical Itwari
xi. Govt. Medical College
xii. Meyo Hospital
xiii. Decora cooler,kalamna road
xiv Vishal Cooler , Great Nag Road
xv Swastik cooler, Shantinagar
xvi Eros Cooler, Ghat Road, Nagpur
xvii. Ram Cooler, Kashibai temple road,Near sukrawari
xviii. Pandey General agency
xix GC Electricals, 14 Great nag road,Nagpur
xx. Mure Memorial hospital Sitaburdi

4. List of industries identified for Electronic Technology Vocational course

i. Damkondwar Electronic
ii. Patil Electronic
iii. R.K.Electronic
iv. Radhey Electronics
v. Prajwal Servicing centre
vi Sharpline services
vii. Praneel electronics
viii. Pramahans Electronics
ix. Prashant Electronics
x. Yash Electronics
xi Adroit Industries
xii. S.A.Electronics
xiii. Power and Communication Engineers
xiv Guddu Electronics
xv. Shrikrupa Electronics
xvi. Latir Electronics
xvii. Deepak Electronics and Electrical

xviii. Saikpura Electronics
xix. Key computers
xx Datatranics
xxi. E.C T.V Service/ Sales
xxii. Janta Radio
xxiii Tiwari T.V.& Radio
xxiv. Concorde Electronics
xxv. Geetanjali Engineering Compony
xxvi. Asian electronics
xxvii. Sun Product
xxviii BPL Service station
xxix. Maratha Mandir
xxx. A K Gandhi
xxxi Vijay Trading company
xxxii. Sehgal electronic
xxxiii Onkar Electronics
xxxiv Apalate Electronics
xxxv. Central Railway signal & telecommunication
xxxvi Unilog system private ltd
xxxvii. Meltron
xxxviii High tech resistance
xxxix. Vyas Electronics

5. List of industries identified for Account and Auditing Vocational course

i. Nagpur nagrik sahakari bank
ii. Sahid chowk, Itwari, Nagpur
iii. Mahrashtra state electricity board, urban circle, Gadigogam
iv. Accountant General (A&I)- I mah. west high court rd., civilines
v. Mineral Exploration Corporation Ltd, Seminary Hills
vi. MSRTC (Divisional office), railway station road, Nagpur
vii. Mahindra and Mahindra Ltd., MIDC. Nagpur
viii. Bajaj Plastic Ltd, D-1, MIDC, Nagpur
ix. Zila Parishad, Nagpur
x Tribal development, 194, Gokulpeth
xi. Ground Water survey and dev agency, 90 Shivaji Nagar
xii. Western coal field, Seminary hills
xiii. Bank of Maharashtra Building
xiv. Bank of India, Kingsway
xv. State bank of India, Kingsway
xvi. Nippon Denso Ispat Ltd Kalmeshwar, MIDC, Nagpur
xvii. Central ground water board,central bajar rd. ramdaspeth
xviii. VIPindustries Ltd. MIDC Nagpur
xix Meltron Ltd. MIDC Nagpur
xx. Firth (India) Ltd. MIDC Nagpur
xxi MIDC Nagpur

Progress Report of the School – 2

Name of District : ***Nagpur***

1 Name of School : Rukhadashram Junior College, Kuli, Nagpur

2 Name of Courses ·
1 Maintenance and Repair of Electrical Domestic Appliances
2. Accounting and Auditing
3. Electronic Technology

3. Whether Rural/Urban . Rural

4. School Timing . 11a m. to 5 p.m.

5. Whether Full Time Teacher available Yes/No : Yes

6 Whether Instructor available Yes/No : Yes

7. Whether practical facilities adequate, Yes/No . Yes

8 Whether student get enough time for practical · Yes

9. Number of Industries/ Institutions in nearby schools : It is rural area, therefore it was suggested that PTC may be established

Name of courses :
1. Maintenance and Repair of Electrical Domestic Appliances
2. Electronic Technology

10 Is there scope to start School–

– Industry Linkage: School Industry Linkage can be started in auditing and accounting vocational course as there are many co-operative societies in local area. It is rural area,therfore it was suggested that PTC may be established in engineering based vocational courses.

11. Action suggested

i. Scheduling of time table
ii. Identification of local industries for collaboration
iii. Grouping of students
iv. Preparation of individual student file
v Deputation of students once in week to industries
vi. Establishment of Production cum Training Centre in school
vii Identification of practical activities to be done in PTC
viii. Inviting industry experts for guest lecturer
ix Populrization about of PTC activities

12. Outcome

- i. PTC activity identified
- ii. Servicing of motor and repairing of domestic appliance were started
- iii. Visit to local industries
- iv. Student deputed to the industry for OJT
- v. Monitoring by class teacher/Principal
- vi. Guest Speaker being invited
- vii Popularization about PTC were made.

13. List of industries identified for school industry linkage :

1. Local co-operative society of dairy
2. Motor winding and repairing centre

Progress Report of the School - 3

Name of District : ***Bhopal***

1. Name of School : Govt Boys Hr Secondary School,Berasia,Bhopal
2. Name of Courses : Dairying
3. Whether Rural/Urban : Rural
4. School Timing : No
5. Whether Full Time Teacher available Yes/No : No
6. Whether Instructor available Yes/No : Part time teacher
7. Whether practical facilities adequate, Yes/No : No
8. Whether student get : No enough time for practical
9. Number of Industries/ institutions in nearby schools : Few

   Name of courses : Dairying

10. Is there scope to start School Industry Linkage : Yes

11. Action suggested
    - i Scheduling of time table
    - ii. Identification of local industries for collaboration
    - iii Grouping of students
    - iv. Identification of practical activities to be made
    - v. Preparation of individual student file
    - vi. Deputation of students once in week to industries
    - vii. Inviting industry experts for guest lecturer

12. Outcome
    - i. Industries identified
    - ii. Student deputed to the industry
    - iii. Monitoring by class teacher/Principal
    - iv. Guest Speaker being invited
    - v. Arrangement of OJT in Holiday/vacation

13. Name of collaborative agency :

Govt Veterinary Hospital, Berasia
MP Dairy Federation Milk plant Bhopal
MP Bull Mother Farm,Bhadbhada Road
Local Dairy farmer at Berasia
Animal husbandry department, Bersia, Vidisha and Bhopal

Progress Report of the School - 4

Name of District : *Bhopal*

1.	Name of School	:	Govt. Boys Hr.Sechool, Bairagarh
2	Name of Courses	:	1. Stenography 2. Radio and TV repair 3. Maintenance and Repair of Electrical Domestic Appliances
3.	Whether Rural/Urban	:	Urban
4.	School Timing	:	7.30 am to 1 30pm
5.	Whether Full Time Teacher available Yes/No	·	Only in one subject
6.	Whether Instructor available Yes/No	:	Part time instructor
7	Whether practical facilities adequate, Yes/No		Not very adequate
8.	Whether student get enough time for practical	:	Not enough time
9.	Number of Industries/ institutions in nearby schools	:	Many industries
	Name of courses	:	1. Stenography 2. Radio and TV repair 3 Maintenance and Repair of Electrical Domestic Appliances
10.	Is there scope to start School Industry Linkage	:	Yes

11. Action suggested

- i. Scheduling of time table
- ii. Identification of local industries for collaboration
- iii Grouping of students
- iv. Identification of practical activities to be made
- v. Preparation of individual student file
- vi. Deputation of students once in week to industries
- vii. Establishment of Production cum Training Centre in school
- viii. Inviting industry experts for guest lecturer
- ix. Popularization about of PTC activities.

12. Outcome :

- i. Industries identified
- ii. Student deputed to the industry
- iii. Monitoring by class teacher/Principal
- iv. Guest Speaker being invited
- v Arrangement of OJT in Holiday/vacation
- vi. Populrization about of PTC activities were made.
- vii PTC activities started .

13 Name of collaborative agency

- i. Repairing centre of Radio & TV of Bairagarh
- ii. Typing Institute
- iii. Govt Polytechnic
- iv. Central institute of Agri . Engg
- v. Service centre of Electrical domestic equipment's
- vi. Bank, office
- vii. Private electrical contract

Progress Report of the School - 5

Name of District : ***Jabalpur***

1. Name of School : Govt. Higher Secondary Sechool,Khitola bajar, Sihora, Jabalpur

2. Name of Courses :
   1. Building Construction
   2. Maintenance and Repair of Electrical Domestic Appliances

3 Whether Rural/Urban : Rural

4. School Timing : 7 30 am to 11 40 am

5. Whether Full Time Teacher available Yes/No : Only in one subject

6 Whether Instructor available Yes/No Part time instructor

7. Whether practical facilities adequate, Yes/No : Not very adequate

8. Whether student get enough time for practical : Not enough time

9. Number of Industries/ institutions in nearby schools : Many industries

   Name of courses :
   1. Building Construction
   2. Maintenance and Repair of Electrical Domestic Appliances

10. Is there scope to start School Industry Linkage : Yes

11 Action suggested

- i. Scheduling of time table
- ii. Identification of local industries for collaboration
- iii. Grouping of students
- iv. Identification of practical activities to be made
- v. Preparation of individual student file
- vi Deputation of students once in week to industries
- vii Establishment of Production cum Training Centre in school
- viii. Inviting industry experts for guest lecturer
- ix. Popularisation about of PTC activities.

12. Outcome

- i. Industries identified
- ii. Student deputed to the industry
- iii Monitoring by class teacher/Principal
- iv. Guest Speaker being invited
- v. Arrangement of OJT in Holiday/vacation
- vi. Popularisation about of PTC activities were made.

13. Name of collaborative agency ·

- i. Kailash Jain Builder
- ii Building material supplier
- iii. Govt. Engg college Jabalpur
- iv. Nagarpalika, Sehora
- v. M/S R.K Construction Sehora
- vi. Local estimator/ Surveyor
- vii M/s Agarwal stone crusher

Progress Report of the School - 6

Name of District : ***Jabalpur***

1. Name of School : Govt. Higher Secondary School, Adhartal, Jabalpur

2. Name of Courses :
   1. Banking Assistance
   2. Repair of Radio and TV
   3. Accountancy

3 Whether Rural/Urban : Urban

4. School Timing : 7 30 am to 11 40 am

5. Whether Full Time Teacher available Yes/No : Only in two subject

6. Whether Instructor available Yes/No : Part time instructor

7. Whether practical facilities adequate, Yes/No : Not very adequate

8. Whether student get enough time for practical : Not enough time

9. Number of Industries/ institutions in nearby schools : Many industries

   Name of courses :
   1. Banking Assistance
   2. Repair of Radio and TV
   3. Accountancy

10. Is there scope to start School Industry Linkage : Yes

11. Action suggested
    - i Scheduling of time table
    - ii. Identification of local industries for collaboration
    - iii Grouping of students
    - iv. Identification of practical activities to be made
    - v. Preparation of individual student file
    - vi. Deputation of students once in week to industries
    - vii. Establishment of Production cum Training Centre in school
    - viii Inviting industry experts for guest lecturer

ix. Populrization about of PTC activities.

13. Outcome

i Industries identified
ii. Student deputed to the industry
iii. Monitoring by class teacher/Principal
iv Guest Speaker being invited
v. Arrangement of OJT in Holiday/vacation
vi. Popularisation about of PTC activities were made.

14 Name of collaborative agency :

i. Repairing centre of Radio & TV
ii. Local bank
iii. Govt. Polytechnic
iv Service Centre of radio Phillips
v. Service centre of TV
vi. Charted accountant firm

ANALYSIS OF THE STUDY

CHAPTER 4

Analysis of the study

This chapter explains in two parts the results of study a) Development of school industry linkage in Schools and b) Status of school industry linkage in various school in our country.

a) Development of school industry linkage in Schools :

Success of school industry linkage can be well established if management of school, teacher and local industry agrees with concept of school industry linkage. It was observed that in case where a good training facilities are available in school then linkages help in better output to vocational competencies of students It was noticed that teacher is main factor in developing linkages in schools.

An orientation to the teachers of selected Nagger schools made them importance of school industry linkages. Teachers were motivated towards development of school industry linkages in their respective vocational courses. School management was co-operative in establishing school industries linkages with nearby industries. School teachers identified local industries and a dialogue was developed to impart school industry linkage. School student were also told the importance of school industry linkages, they were also requested that they should also identify the local industry in nearby to their residence or market. It also showed a positive response. It was followed by teacher visit to concerned industries. Hence student after school hour started visited industries for their own development. It was a good result here. Generally students were placed during vacations twice in a year. Similarly student started repairing the domestic equipment during practical period. School started using the concept of Production cum Training centre at schools.Various activity were planned, Popularisation about PTC was done so students and teacher started bringing equipment's from home for repairing at school. It was good move, It created lot of interested among student to learn and earn concept. A confidence among student was developed. Student showed desire to learn in effective manner. Concept of production cum training centre could be well implemented if basic facilities like equipment , raw material are available It was observed that facilities are well equipped in Nagpur school where as MP school facilities were not well equipped. Student had to borrow equipment from outside for repairing. Facilities were also not upto mark. It is very necessary that

basic tools and equipment may be made available to the schools. Teachers of MP were mostly on part time basis, hence they were lacking in developing interest in linkages development. Interest on part of Principal were also not very much encouraging. Teachers from MP were repeatedly motivated to develop linkages in their school. Efforts were made by Principal Investigator to contact local authorities for staring linkages in their establishment, which took place specially in dairying vocational courses. Student made visits to veterinary hospital, dairy plants, dairy farms and local dairy industries, participated in On the Job Training at Dairy plant and Mother Bull farm also. Similarly student of steno typing visited various office and participated in OJT at Central Institute of Agri.Engg and other institution also Students of building construction vocational course started visiting construction sites, govt engineering college, construction agencies and local construction related agencies for training. It may be mentioned that if the teachers and principal of school are well exposed to concept of School Industry linkages and Production Cum training centre, then linkages may be well developed. Hence presence of full time teacher is very important to co-ordinate these activities. Success of school industry linkage depend upon dedicated school management.

b) Information received from various agencies from states revealed the status of school industry linkages is summarised question wise below :

i) What is present status of School Industry Linkage Model?

Based on responses received from different states the following three model of school industry linkage are prevailing in various places

(a) Institution Based : Student carry out various activities and acquire skill during PTC and service related activites. Student develop skill during practical period and during summer On the Job training at School. Like Stenography, Beauti culture ,food preservation etc vocational courses.

(b) Partial Collaboration : Since all the equipment's and facility can not be provided in the school, a collaboration with nearby organisation/ institution are developed. Students are deputed for practical classes, OJT and Apprenticeship Training.

(c) Fully Collaboration : Health related course are being taught in active collaboration with health department in some places. Student studies general

courses in school whereas vocational theory and practical are taught in hospital (Industry). A MOU is signed between school and industry.

ii) Whether involvement of industry in developing the curriculum has been made?
PSSCIVE involves industry in development of the curriculum, Generally this curriculum is being adopted by states with little modification. States are also involving industry in curriculum development.

iii) Is there any co-operation for time table adjustment?
Time table adjustment is made for both model viz. Fully Collaboration and partial collaborating model.

iv) How many numbers of hours for usage of equipment in industry?
   a) For demonstration
   b) "Hand on" experience
   Industry allow demonstration activity as per practical. Hours varies from activity to activity Hour for Hand on experience is dependent on activity.

v) Whether professional experts are available for taking classes?
Yes, professional experts are taking classes

vi) Is there any sharing of raw material cost?
Yes in case of fully collaborating model, sharing of raw material cost is made.

vii) Whether library facility are used?
Industries having library facilities allow student to take help of library.

viii) Any preparation of instruction material in collaborative manner?
Practical Manual of industries are made available to students as instruction material.

ix) Is there any agreement for On-the-Job Training (OJT)?
It has been observed that an agreement for On-the-Job training is made.

x) Number of hours for OJT recommended in the curriculum?
One hundred hours per year is recommended for On the job training in the curriculum. Few states are following it

xi) Is identification of teachers co-ordinator is being made?

Yes, identification of teachers co-ordinator is being made.

xii) Any prescribed curricula of OJT?

In curricula of PSSCIVE, OJT sites and Syllabus are mentioned for imparting OJT. As such no separate exclusive syllabus for OJT is developed by any state

xiii) What type of monitoring is done during OJT?

School teacher and Principle visit to sites and check the register, As well as district level authority in Mahrashtra, Chandigarh and Punjab visit sites during OJT.

xiv) Whether concept of Production-cum-Training Centre is being thought over?

Yes, it is a policy matter, states agencies have principally agreed to implement the concept of PTC officially. Unofficially this concept is being implemented in the schools.

B. What is impact of School-Industry Linkage on Vocational EducationProgramme (VEP)?

Better practical training. Confidence among the students. Industries are interested towards trained vocational passout.

C. What are the problems encountered by institution and industry in establishing the linkages?

i) Missing of district level official and district agency for establishment of school industry linkage.
ii) Initial planning for linkage before starting vocational courses.
iii) Industries and related agencies are not aware about the vocational courses
iv) School authorities are not exposed about school industry linkage.
v) No specific budget for School industry linkage (transport, raw material etc.)

D. What is the mechanism, what can act as model for establishing the School-Industry Linkages?

For better implementation of school industry linkage, it is suggested that before starting vocational course, a proper linkages should be selected and developed. A district level committee should be made responsible for making efforts in school industry linkage. An agreement/MOU between school and industry should be made towards sharing of raw material cost , salary of experts and infrastructure charges etc.

E What is impact of VEP after strengthening the School Industry Linkages in selected schools?

Better implementation of VEP, as students are exposed to the real world of work and it helps in acquiring competencies.

F. Nature and extent of acceptability and popularity of VEP among the students and community?

A lot of efforts is to made towards acceptability and popularity of VEP among students and community. Emphasis is to be given on complete package at school in form of equipment and tools, Instruction material, fully motivated teachers, provision of raw materials and effective practical training through OJT and PTC. The school whoever is offering in this manner are attracting students and community and their vocational courses are getting popular.

G Is there any qualitative change in student competencies?

Student competencies acquire qualitative changes very much, exposure to real work situation and practice make them more skill oriented

H. Which type of learning model would be more appropriate for the different vocational courses?

It has been observed that three type of model for various vocational courses may be adopted

(i) Institution based . Vocational courses, like stenography, Beauty culture, Food Preservation, Office management etc may be successfully run in the school if facilities are available in the school. Student can develop skill through rigorous practice during school period and vacation. PTC will be part of the school.

(ii) Partial Collaboration : Since all the equipment and faculty are not provided in the school, it is suggested that various courses such as Building Construction, RMEDA, Repair of Radio and TV, CGDM, Scooter moped, Welding Technology, Horticulture, Banking, Farm machinery, etc. should have active collaboration with nearby institution such as ITI, Polytechnic, Industry department, Hotel Organisation, agricultural department, Workshop, Garage of automobile etc. Student may be deputed during school practical period for doing practical work. A schedule may be made for this implementation. An understanding between various organisation may be created for implementing the action.

(iii) Fully Collaboration : Health related courses like Medical Lab Technology, ANM etc. should be taught in active collaboration with health department. Student will attend school for general course. Vocational theory and practices will be taught in hospital/Medical college. A MOU must be signed by implementing authority.

CONCLUSION AND SUGGESTIONS

CHAPTER 5

Conclusion and Suggestions

Vocational Education is important programme for the student. Aim of this programme is to prepare student for world of work through self or wage employment.

Success of vocational programme depends upon availability of all resources viz. instruction material, raw material, equipment, full time teacher, workshop for practical work OJT and school industry linkages.

For complete training in the course, it is necessary that student are acquainted with real world of work by making strong linkage with industries to vocational school. It will create interest in student to acquire more knowledge and skill

Hence school industry linkage has been made important component in vocational education programme. Linkage will help in development of confidence in students. It is necessary that concept of visit to industries, expert lecture, On the Job training and Production cum training should be properly introduced in the training programme.

It has been observed that when basic facilities like full time teacher, tools, equipment and raw material facilities and effective linkages with industries are available in school then it strengthens vocational education programme. Teacher is very important factor, teacher understand the concept of school industry linkage, so that student can be well exposed to world of work through effective linkage.

In the case of schools of Nagpur, two teacher per course have been appointed so that school industry linkage could be developed effectively whereas in schools of MP, teachers have not been appointed on regular basis, help of part time teacher is being taken in running the programme Besides lab facilities are not well equipped in MP schools. It make students more uncomfortable during study. Linkage developed with industries could develop more confidence among the student

Following strategies are suggested for effective implementation of School Industry Linkages in vocational education programme.

1 Industries is very important factor in developing of trained manpower. Industries must be involved in all steps of identifying of manpower needs, curriculum development, sharing of infrastructure, expert service, practical/ on the job training, evaluation of students and placement in vocational educational programme.

2 Industries should be selected prior to starting of vocational courses and an agreement with school should be made for effective collaboration.

3. A proper school time table should be made for effective implementation.

4. A district level committee should be made responsible for implementing the school industry linkages with institutions, This committee will monitor the linkages and modalities to be made during visits, apprenticeship training and On the job training.

5. A proper record in student register should be made for recording the activity undertaken during collaboration.

6. Teacher should be well trained and should be motivated for effective school industry linkages.

7. Students should be ma~~k~~de aware~~ness~~ about concept of School industries linkages and their role during training

8. Vocation school ~~who~~ that are not able to make linkages with industries should start Production cum training/service Centre in their campus.

9. Institution and states should ensure availability of funds for establishing school industry linkages The institution can generate resources for this purpose through Production cum Training / Services activities.

10. Evaluation of students in assessing competencies should be done both by teachers and industries

6

ANNEXURE

PSS Central Institute of Vocational Education
131 Zone-II, M P Nagar, Bhopal – 462 011

Project Title : Establishment of School-Industry Linkage in Secondary Vocational School - Action Research (Sponsored by ERIC, NCERT, New Delhi)

Schedule 1

Name of the State .
Name of the School
Urban/Rural :

A. Type of School Industry Linkage Model ·
   i) What is present status of School Industry Linkage Model?
   ii) Whether involvement of industry in developing the curriculum has been made?
   iii) Is there any co-operation for time table adjustment?
   iv) How many numbers of hours for usage of equipment in industry?
      a) For demonstration
      b) "Hand on" experience
   v) Whether professional experts are available for taking classes?
   vi) Is there any sharing of raw material cost?
   vii) Whether library facility are used?
   viii) Any preparation of instruction material in collaborative manner?
   ix) Is there any agreement for On-the-Job Training (OJT)?
   x) Number of hours for OJT recommended in the curriculum?
   xi) Is identification of teachers co-ordinator is being made?
   xii) Any prescribed curricula of OJT?
   xiii) What type of monitoring is done during OJT?
   xiv) Whether concept of Production-cum-Training Centre is being thought over?

B What is impact of School-Industry Linkage on Vocational Education Programme (VEP)?

C What are the problems encountered by institution and industry in establishing the linkages?

D What are the stimuli in establishing the linkages?

E What is the mechanism, what can act as model for establishing the School-Industry Linkages?

F What is impact of VEP after strengthening the School Industry Linkages in six schools?

G Nature and extent of acceptability and popularity of VEP among the students and community?

H. Is there any qualitative change in student competencies?

I. Which type of learning model would be more appropriate for the different based courses?

PSS Central Institute of Vocational Education
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Project Title : Establishment of School-Industry Linkage in Secondary Vocational School - Action Research (Sponsored by ERIC, NCERT, New Delhi)

Schedule 2

Evaluation of Student, Student General Performance Record
(to be maintained by the In-plant Supervisor)

Student________________________ School __________________

Vocational Subjects____________ Industry___________________

Supervisor_________________ Industry Address_______________

Scale: 1. Poor
2. Satisfactory
3. Good
4. Very Good
5. Excellent

PERFORMANCE	**FIRST**	**SECOND**
(Specify Job Skills)	Marking Period 1 2 3 4	Marking Period 1 2 3 4
Quickness to learn		
Quantity of work		
Quality of work		
Communications:		
Listening skills		
Verbal skills		
Written skills		
Cooperation with Supervisors/ Public		
Attendance		
PERSONALITY		
Attitude (Enthusiasm)		
Responsibility		
Initiative (self starter)		
Appearance		
Courtesy		
Application to work		

Signature of Implant Supervisor

REFERENCES